Abstract

Three algorithms enumerate the decimal expansions of e, π, $(2)^{1/2}$ and $(3)^{1/2}$ by using 1.) 16 special angles in radians on the unit circle in a transition from arbitrary-degrees to natural-radians defined as Δ (*match-with-rotate* algorithm), 2.) subsets of 7-1 special angles from $5\pi/6$ to $5\pi/3$ derived from the Pythagorean theorem such that $-(-a) = -a$, the square of imaginary i, i.e. i^2 does not equal -1, $-$ does not equal -1, $(-1)^{1/2} = i$, $(-)^{1/2} =$ *yod* (*cusp root method* algorithm), the 10^{th} letter of the Hebrew alphabet, akin to *iota* of Semitic origin, and 3.) 16 special angles in radians on *zero vector* algorithm defined in terms of the *yod* null set of only θ on the unit origin in polar coordinates, for the seed matrices as the mechanisms of sequence extraction whereby numerical-based-learning algorithms focusing on Artificial Neural Networks learn nonlinear functional mapping from an uncertain and complex non-congruential system for control and numerical modeling.